WASTE CALCULATOR TO IMPROVE COSTS OF USE OF IMIGLUCERASE IN COLOMBIA AND PERU

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Introduction

- Imiglucerase dosing for the treatment of Gaucher type 1 disease is 15 to 60 IU/Kg per infusion.
- The dose of 60 IU/kg every 2 weeks is the dosage for which the best clinical results have been observed[1].
- Depending on the patient's weight, the use of 400 IU vials per infusion can result in drug waste.

Objective

- Calculate the potential waste reduction and cost savings resulting from the redistribution of the vials per infusion.

Methods

- Construction of a comparation model based on two scenarios:
  - **Scenario 1:** Dose of 60 IU/Kg, and use of 400 IU vials, infused every 14 days.
  - **Scenario 2:** Redistribution of vials, using entire vial contents during each infusion, with no changes to the monthly total dose.
- The study modelled a cohort of 147 patients with Gaucher type 1 disease with different weights, which determines vial use and expected drug waste
- An example for a 50kg patient can be seen in Figure 1.
- Costs for Imiglucerase acquisition were obtained from the National Drug Price information system (SISMED).

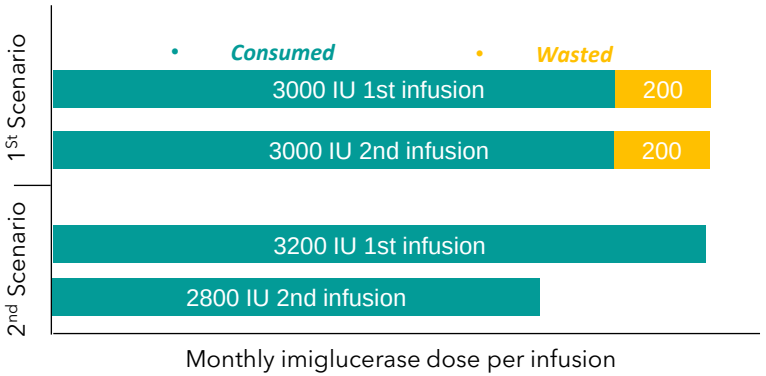

Figure 1. Example Dosing Scenarios for a 50kg patient

Results

- The comparison between the two scenarios shows that the reduction in drug waste allows for potential savings of up to 33% of the annual treatment value, depending on the patient's weight.
- Results for the cohort show average potential savings of around 4% in annual treatment, 82,8% reduction in waste and 73,7% reduction in waste costs. (Table 1).

Table 1. Cohort expected waste and cost

Scenario	Waste (IU)	Waste (USD$)
1. Standard	724.412	$ 1.610.971
2. Recombined	190.580	$ 423.818
% Reduction	73,69%	

Conclusion

- The dosing approach based on differential vial use per infusion, represents an opportunity for the minimization of waste in imiglucerase use for Gaucher disease, without modifying effectiveness or safety for patients to achieve the expected health outcomes.
- This approach allows optimizing drug use and resources for the financing of orphan diseases in healthcare systems.

References

1. Wenstrup, R. J., Kacena, K. A., Kaplan, P., Pastores, G. M., Prakash-Cheng, A., Zimran, A., & Hangartner, T. N. (2007). Effect of enzyme replacement therapy with imiglucerase on BMD in type 1 Gaucher disease. Journal of bone and mineral research: the official journal of the American Society for Bone and Mineral Research, 22(1), 119–126.

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